

Remarks

This application has been reviewed in light of the Office Action of May 7, 2003. Claims 1-16 are pending, and all claims stand rejected. In response, claim 17 is added; and the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Claims 1-3, 5, 6, 8, 9, and 16 are rejected under 35 USC 103 over Scott US Patent 6,240,909. Applicant traverses this ground of rejection.

Claims 4 and 7 are rejected under 35 USC 103 over Scott. Applicant traverses this ground of rejection.

Claims 10-15 are rejected under 35 USC 103 over Scott as applied to claims 1-9. Applicant traverses this ground of rejection.

Because all three of the rejections are based on the one reference of Scott, Applicant will address them together.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

Claim 1 recites in part:

"a non-integral body comprising at least three pieces joined together"

Claims 6 and 11 each recite in part:

"the body has three separate segments that are joined together"

The key portion of the explanation of the rejection is found in the second full paragraph of page 3 of the Office Action:

"The patent by Scott does not require that each of the three body areas are to be separately formed, then attached together. It is the view of the examiner that one integral piece has the functional equivalence of three connected pieces, and that it would have been obvious to anyone skilled in the art to provide it separately if manufacturing difficulties required it."

The statement of the first sentence is accurate, but in fact Scott goes well beyond the implication of the first sentence. Scott affirmatively teaches that the fill block must be a one-piece body (col. 12, line 40):

"The fill block 400 includes a integral one piece body 402 which is machined from a solid block of aluminum."

See also claim 1 of Scott, which requires a one-piece body.

Scott therefore affirmatively teaches against the limitations of claims 1-4, 6, and 11.

It is a well established principle of law that the rejection may not properly be based on a reference which teaches away from the present invention as recited in the claims.

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. In re Sponnoble, 160 USPQ 237 244 (CCPA 1969)...As "a useful general rule," ... "a reference that 'teaches away' can not create a prima facie case of obviousness." In re Gurley, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994)"

Scott is therefore, as a matter of law, not properly applied as a reference against claims 1-4, 6, and 11, because Scott affirmatively teaches against the recited multipart body by requiring a one-piece body..

Scott also does not teach the recited limitation, and therefore cannot teach the limitations of claims 1-4, 6, and 11, see MPEP 2143.03, which requires "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art." [emphasis added]

The second sentence of the quoted portion from the explanation of the rejection states in part that "one integral piece has the functional equivalence of three connected pieces". Applicant must respectfully traverse this assertion. At multiple locations throughout the present application, Applicant pointed out that the one-piece design of the Scott patent does not meet the current industry performance standard NGV 3.1. See, for example, paragraphs [0005], [0014], [0015], [0016], and [0030]. At paragraph [0034], the application sets forth the results of direct comparative testing of the one-piece approach of the Scott patent and the present approach. The approach of the Scott patent did not meet the requirements of NGV 3.1, and the present approach did meet the requirements of NGV 3.1. This is direct experimental proof that the two approaches are not functionally equivalent. It is further direct experimental proof that the present approach yields surprising and unexpected results as compared with the approach of the Scott patent. If the Examiner has some evidence that would controvert this evidence submitted by Applicant, Applicant asks that it be made of record.

The second sentence from the quoted portion of the explanation of the rejection

also states in part that "it would have been obvious to anyone skilled in the art to provide it separately if manufacturing difficulties required it". Manufacturing difficulties are not the issue here, and nothing in the prior art suggests any difficulty in manufacturing the valve of Scott. The argument regarding manufacturing difficulties is a hindsight argument that is not based on anything in Scott. The issue in fact is that the approach of the Scott patent does not meet the performance requirements of the industry standard, and the present approach does. As stated in paragraph [0005] of the present application: "Chief among these shortcomings is that the fill block using the integral one-piece body of the Scott patent cannot meet the requirements of NGV 3.1. Specifically, the fill block having the integral one-piece body of the Scott patent cannot function in a leak-free manner over the entire range of pressures and temperatures required by NGV 3.1." Nothing in the prior art suggests that the approach of the Scott patent does not meet the industry standards.

Claims 1, 5, and 14 all substantially recite in part:

"a controllable ball-valve defueling closure having a defueling-valve first side in fluid-flow communication with the second shutoff-valve side and a defueling-valve second side in fluid-flow communication with the defueling port, and

a controllable ball-valve vent closure having a vent-valve first side in fluid-flow communication with the vent port, and a vent-valve second side in fluid-flow communication with the defueling-valve second side, wherein the defueling closure and the vent closure are mounted on a common defuel/vent valve stem, and
wherein the defueling closure and the vent closure cannot be open at the same time." [quote from claim 5]

Scott has no such teaching. Scott requires the use of a spool defueling valve (col. 13, lines 40-44). The explanation of the rejection contains a factual error on page 2, where it states, "The defuel/vent valve has a controllable ball-valve defueling

closure..." A spool valve is not a ball valve, and the two types of valves have very different seal and seating approaches. If the rejection is maintained, Applicant asks that the Examiner correct this statement in the explanation of the rejection, and state that Scott teaches the use of a spool defuel-vent valve. Otherwise, an explanation of any asserted equivalence of the spool and ball valves would be in order. The shortcomings of the use of the spool valve in the present technology are discussed at para. [0014] and [0030] of the present application. The advantageous results obtained with the present ball valve structure in the defueling valve are discussed at para. [0031]-[0033] of the present application. Applicant incorporates the prior discussion of legal issues. Scott may not be applied as a reference against claims 1-4, 5-9, and 14 because it directly teaches away from the quoted claim limitation. Scott does not teach the claim limitation, because it teaches directly away from the claim limitation.

Accordingly, Scott cannot teach the limitations of claims 1-4, 5-9, and 14.

Claims 4, 7, and 10 (and thence claims 11-15) each substantially recites:

"the defuel/vent valve has no elastomeric materials therein" [quotation from claim 4]

As acknowledged in the fourth paragraph on page 3 of the Office Action, "The patent by Scott requires elastomeric O-ring seals to provided around the defuel/vent valve." Applicant incorporates the prior discussion of legal issues. Scott may not be applied as a reference against claims 4, 7, and 10-15 because it directly teaches away from the quoted claim limitation. Scott does not teach the claim limitation, because it teaches directly away from the claim limitation.

The explanation of the rejection of claims 4 and 7 asserts "It is the view of the examiner that the lack of O-ring seals for such a valve is not a patentable distinction. It is a choice of design based on efficiency requirements that decides whether seals of any type are used." Applicant must respectfully traverse this statement for both factual and legal reasons. Factually, Applicant explained at length the nature of the problems

associated with the use of elastomeric seals in the defuel-vent valve and the advantages of the present approach. See for example para. [0014]-[0015] and [0031] of the present application. Legally, as to the "choice of design" argument, the concept of "design choice" is not intended to substitute for statutory prior art. It provides a means by which one of several realistic alternatives presented by statutory prior art may be selected, absent surprising or unexpected advantages. It is to be used only where the applied statutory prior art sets forth a list of realistic alternative selections, and it would be a matter of design choice to select one member from the list. In this case, the prior art of record presents no such design choice, and accordingly the application of "obvious matter of design choice" is not appropriate here. In fact, Scott does not recognize the problems associated with the use of elastomeric seals, and does not suggest the present approach. It is unclear what "efficiency requirements" as mentioned in the above quotation from the Office Action refers to. If the rejection is maintained, Applicant asks that the Examiner explain what this term means, where it comes from (certainly not from either Scott or the present application), and its relevance here. This amounts to a "well known in the art" type of rejection. Applicant traverses this approach, and asks for the citation and application of proper statutory prior art or other evidence supporting the rejections, MPEP 2144.03. If the rejection is maintained, Applicant asks that the Examiner cite and apply statutory prior art, pursuant to MPEP 2144.03.

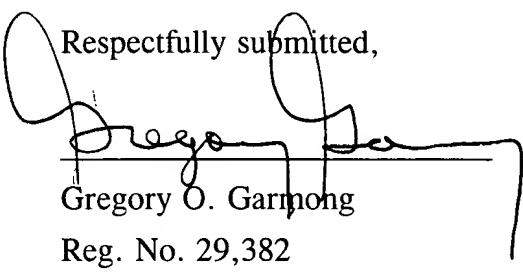
Claim 16 recites in part:

"the shutoff valve and the defuel/vent valve being leak free over a temperature range of from -40°F to +180°F and over a pressure range of from 72 pounds per square inch to 6000 pounds per square inch."

Scott has no explicit teaching of this limitation. The experimental testing reported at paragraph [0034] demonstrates that Scott does not implicitly teach this limitation. Accordingly, Scott cannot teach the limitations of claim 16.

It will be appreciated that various claims contain other limitations which are either not taught by Scott, or where Scott teaches directly away from the recited limitation. These other limitations can be addressed later if necessary. However, it should be clear that on the basis of the prior discussion, Scott does not teach the limitations of the present claims.

Respectfully submitted,


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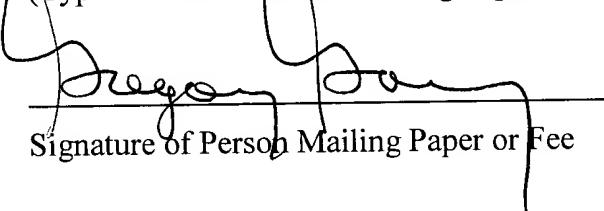
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Encl: Amendment (13 pages)

Petition for Extension of Time (1 page)

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